

SERVICE MANUAL

COMPACT DISC STEREO
RADIO CASSETTE RECORDER

BASIC TAPE MECHANISM : TN-21ZVC-2000
BASIC CD MECHANISM : DA11T3C

- This Service Manual is the "Revision Publishing" and replaces "Simple Manual" (S/M Code No. 09-006-427-8T2).

SPECIFICATIONS

Tuner section

Frequency range

FM : 87.5 MHz - 108.0 MHz
Antenna : Rod antenna

AM : 530 kHz - 1,605 kHz
Antenna : Ferrite bar antenna

Deck section

Track format

Frequency range

Recording system

Erasing system

Heads

4 tracks, 2 channels
Normal tape : 50 Hz - 12,500 Hz (EIAJ)
AC bias
Magnet erase
Recording/Playback head x 1/
Erasure head x 1

CD player section

Disc

Scanning method

Compact disc
Non-contact optical scanner
(semiconductor laser)

General

Speaker

100 mm cone type (2)

Output

Headphones jack (stereo mini-jack)

Power output

2.5 W + 2.5 W (EIAJ 7 ohms, THD 10%)
1.9 W + 1.9 W (DIN 1% Rated Power)

Power requirements

DC 12 V using eight size C (R14) batteries,
AC 110 - 120 V/220 - 240 V
switchable, 50/60 Hz

Power consumption

16 W

Dimensions (W x H x D)



435 x 184 x 277 mm

Weight

3.7 kg (excluding batteries)

• Design and specifications are subject to change without notice.

ACCESSORIES / PACKAGE LIST

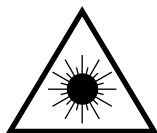
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
	1 8A-CD9-901-010		IB,H(ECA)B
	2 87-A80-036-010		AC CORD SET ASSY,E W/FLTR VOL
	3 87-A91-017-010		PLUG,CONVERSION JT-0476

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laitteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

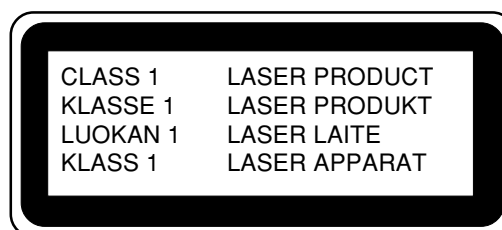
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

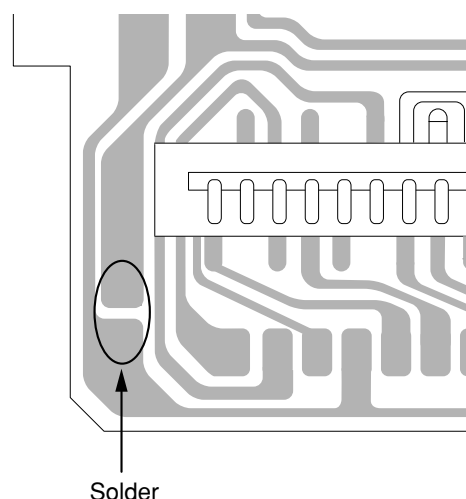


Precaution to replace Optical block (SF-P101NR)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

- 1) After the connection, remove solder shown in the right figure.

PICK-UP Assy P.C.B



ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC				C822	87-010-401-080		CAP, ELECT 1-50V
	87-A20-955-010		IC, LA1828	C823	87-010-178-080		CHIP CAP 1000P
	87-A21-064-010		IC, LA4227	C824	87-010-178-080		CHIP CAP 1000P
	87-A21-520-040		C-IC, M61509FP	C829	87-010-178-080		CHIP CAP 1000P
	87-A20-446-010		C-IC, LA9241ML	C830	87-010-178-080		CHIP CAP 1000P
	87-A20-459-010		C-IC, LC78622ED	C834	87-010-248-080		CAP, ELECT 220-10V
	87-A21-093-010		IC, LA6541D	C843	87-010-197-080		CAP, CHIP 0.01 DM
	8A-CD9-610-010		C-IC, LC865516A-5L26	C844	87-018-124-080		CAP, CER 270P-50V
	87-A21-431-010		IC, BA4560N	C845	87-010-178-080		CHIP CAP 1000P
				C846	87-010-263-080		CAP, ELECT 100-10V
TRANSISTOR				C851	87-010-186-080		CAP, CHIP 4700P
	89-327-143-080		TR, 2SC2714 (O) (0.1W)	C852	87-010-178-080		CHIP CAP 1000P
	87-026-463-080		TR, 2SA933SS (0.3W)	C853	87-018-211-080		CAP, TC U 0.01-50 Z F SA
	87-026-213-080		CHIP-TR, DTC114YK	CN201	87-099-018-010		CONN, 16P
	89-112-965-080		TR, 2SA1296GR (0.75W)	CN801	87-A60-110-010		CONN, 4P V S2M-4W
	87-026-291-080		TR, DTC124XS	CNA302	8A-CD9-629-010		CONN ASSY, 6P MA-TU
	89-213-702-080		TR, 2SB1370E	FC201	8A-CD9-620-010		FF-CABLE, 16P FR-MAIN
	89-318-154-080		TR, 2SC1815Y (0.4W)	JW108	87-003-097-080		COIL, 1.0UH K LAL02
	89-113-187-080		TR, 2SA1318TU	JW132	87-003-097-080		COIL, 1.0UH K LAL02
	87-026-239-080		C-TR, DTC114TK	JW133	87-003-097-080		COIL, 1.0UH K LAL02
	87-026-210-080		C-TR, DTC144EK	L801	87-007-342-010		COIL, OSC 85K BIAS
	87-026-215-010		TR, DTC114YS	SW801	8Z-CD9-609-010		SW, SL 1-6-2 PS62D01
	89-317-403-080		TR, 2SC1740SS				
	87-026-464-080		TR, DTC114TS (0.3W)	CD C.B			
DIODE				C30	87-010-260-080		CAP, ELECT 47-25V
	87-020-465-080		DIODE, 1SS133 (110MA)	C251	87-010-404-080		CAP, ELECT 4.7-50V
	87-027-703-080		ZENER, HZ7A1L	C263	87-010-178-080		CHIP CAP 1000P
	87-070-345-080		DIODE, 1N4148	C264	87-010-178-080		CHIP CAP 1000P
	87-A40-648-080		ZENER, MTZJ8.2A	C265	87-010-263-080		CAP, ELECT 100-10V
	87-A40-234-080		ZENER, MTZJ5.6A	C266	87-010-263-080		CAP, ELECT 100-10V
	87-017-978-080		DIODE, 1N4003	C267	87-010-112-080		CAP, ELECT 100-16V
	87-027-702-080		DIODE, ZENER MTZJ6.2C	C268	87-010-112-080		CAP, ELECT 100-16V
	87-A40-465-010		DIODE, FR202	C271	87-010-221-080		CAP, ELECT 470-10V
	87-A40-337-080		ZENER, MTZJ6.8B	C272	87-010-221-080		CAP, ELECT 470-10V
MAIN C.B				C278	87-010-405-080		CAP, ELECT 10-50V
	C211	87-A11-693-080	C-CAP, 0.15-25V	C279	87-010-385-080		CAP, ELECT 220-25V
	C212	87-A11-693-080	C-CAP, 0.15-25V	C301	87-016-495-000		CAP, E 3300-25 M SMG
	C215	87-016-460-080	C-CAP, S 0.22-16 B	C306	87-010-404-080		CAP, ELECT 4.7-50V
	C216	87-016-460-080	C-CAP, S 0.22-16 B	C307	87-010-401-080		CAP, ELECT 1-50V
	C231	87-010-213-080	C-CAP, S 0.015-50 B	C308	87-010-221-080		CAP, ELECT 470-10V
	C232	87-010-213-080	C-CAP, S 0.015-50 B	C311	87-010-404-080		CAP, ELECT 4.7-50V
	C233	87-A10-201-080	C-CAP, S0.33-16 KB	C312	87-010-385-080		CAP, ELECT 220-25V
	C234	87-A10-201-080	C-CAP, S0.33-16 KB	C321	87-010-197-080		CAP, CHIP 0.01 DM
	C235	87-016-669-080	C-CAP, S 0.1-25 K B	C322	87-010-263-080		CAP, ELECT 100-10V
	C236	87-016-669-080	C-CAP, S 0.1-25 K B	C325	87-010-405-080		CAP, ELECT 10-50V
	C237	87-010-371-080	CAP, E 470-6.3 M SME	C401	87-010-403-080		CAP, ELECT 3.3-50V
	C239	87-010-197-080	CAP, CHIP 0.01 DM	C402	87-010-197-080		CAP, CHIP 0.01 DM
	C240	87-010-197-080	CAP, CHIP 0.01 DM	C403	87-010-263-080		CAP, ELECT 100-10V
	C247	87-010-401-080	CAP, ELECT 1-50V	C404	87-010-248-080		CAP, ELECT 220-10V
	C248	87-010-401-080	CAP, ELECT 1-50V	C405	87-010-197-080		CAP, CHIP 0.01 DM
	C310	87-010-248-080	CAP, ELECT 220-10V	C406	87-010-374-080		CAP, ELECT 47-10V
	C316	87-010-263-080	CAP, ELECT 100-10V	C407	87-010-178-080		CHIP CAP 1000P
	C317	87-010-197-080	CAP, CHIP 0.01 DM	C408	87-010-198-080		CAP, CHIP 0.022
	C801	87-010-248-080	CAP, ELECT 220-10V	C409	87-010-248-080		CAP, ELECT 220-10V
	C805	87-012-365-080	C-CAP, S 0.027-25VBK	C410	87-010-263-080		CAP, ELECT 100-10V
	C806	87-012-365-080	C-CAP, S 0.027-25VBK	C411	87-A11-177-080		C-CAP, S 0.15-16 K B
	C807	87-010-405-080	CAP, ELECT 10-50V	C412	87-010-401-080		CAP, ELECT 1-50V
	C808	87-010-405-080	CAP, ELECT 10-50V	C413	87-016-369-080		C-CAP, S 0.033-25 B K
	C809	87-010-401-080	CAP, ELECT 1-50V	C414	87-010-405-080		CAP, ELECT 10-50V
	C810	87-010-401-080	CAP, ELECT 1-50V	C416	87-010-545-080		CAP, ELECT 0.22-50V
	C811	87-010-178-080	CHIP CAP 1000P	C417	87-012-157-080		C-CAP, S 330P-50 CH
	C812	87-010-178-080	CHIP CAP 1000P	C418	87-010-213-080		C-CAP, S 0.015-50 B
	C816	87-010-180-080	C-CER 1500P	C419	87-A11-608-080		C-CAP, S 0.33-25 K B
	C817	87-010-180-080	C-CER 1500P	C420	87-016-369-080		C-CAP, S 0.033-25 B K
	C821	87-010-401-080	CAP, ELECT 1-50V	C421	87-A11-177-080		C-CAP, S 0.15-16 K B
				C422	87-010-184-080		CHIP CAPACITOR 3300P(K)
				C423	87-010-992-080		C-CAP, S 0.047-25 B
				C424	87-016-460-080		C-CAP, S 0.22-16 B
				C425	87-010-176-080		C-CAP, S 680P-50 SL

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C426	87-A11-608-080		C-CAP,S 0.33-25 K B	L401	87-003-102-080		COIL, 10UH
C428	87-010-197-080		CAP, CHIP 0.01 DM	L404	87-003-152-080		COIL, 100UH
C429	87-010-186-080		CAP,CHIP 4700P	R840	87-029-124-010		RES,FUSE 2.2-1/4
C430	87-012-156-080		C-CAP,S 220P-50 CH	SFR430	87-024-437-080		SFR100K,RH063EC
C431	87-010-545-080		CAP, ELECT 0.22-50V	X401	8Z-CD5-633-010		VIB, CER16.93MHZ FCR16.93M2
C432	87-010-374-080		CAP, ELECT 47-10V				
C433	87-010-401-080		CAP, ELECT 1-50V				
C434	87-010-184-080		CHIP CAPACITOR 3300P(K)	FRONT C.B			
C435	87-010-197-080		CAP, CHIP 0.01 DM	C601	87-010-313-080		CAP, CHIP 18P
C436	87-010-374-080		CAP, ELECT 47-10V	C602	87-010-315-080		C-CAP,S 27P-50 CH
C437	87-010-404-080		CAP, ELECT 4.7-50V	C603	87-010-319-080		C-CAP,S 56P-50 CH
C438	87-012-368-080		C-CAP,S 0.1-50 F	C604	87-010-317-010		CHIP CAP,S 39P CH
C439	87-010-178-080		CHIP CAP 1000P	C605	87-010-264-040		CAP,E 100-10 5L
C440	87-010-145-080		C-CAP,S 1P-50 C CH GRM	C606	87-010-805-080		CAP, S 1-16
C441	87-010-197-080		CAP, CHIP 0.01 DM	C607	87-010-805-080		CAP, S 1-16
C442	87-010-313-080		CAP, CHIP 18P	C608	87-010-401-080		CAP, ELECT 1-50V
C445	87-012-368-080		C-CAP,S 0.1-50 F	C609	87-010-400-080		CAP, ELECT 0.47-50V
C446	87-012-368-080		C-CAP,S 0.1-50 F	C611	87-A10-189-040		CAP,E 220-10
C447	87-012-368-080		C-CAP,S 0.1-50 F	C612	87-010-405-080		CAP, ELECT 10-50V
C448	87-010-315-080		C-CAP,S 27P-50 CH	C613	87-012-368-080		C-CAP,S 0.1-50 F
C450	87-012-140-080		CAP 470P	C614	87-010-312-080		C-CAP,S 15P-50 CH
C451	87-012-156-080		C-CAP,S 220P-50 CH	C615	87-010-805-080		CAP, S 1-16
C455	87-010-247-080		CAP, ELECT 100-50V	C616	87-010-805-080		CAP, S 1-16
C457	87-010-312-080		C-CAP,S 15P-50 CH	C619	87-010-401-080		CAP, ELECT 1-50V
C458	87-010-312-080		C-CAP,S 15P-50 CH	CN601	87-099-033-010		16P 6216 H
C459	87-010-263-080		CAP, ELECT 100-10V	CN602	87-099-201-010		CONN,8P 6216 H
C460	87-015-819-080		CAPACITOR, 0.01	CN604	8A-CD9-623-010		CONN ASSY,4P KEY
C461	87-010-197-080		CAP, CHIP 0.01 DM	L603	87-003-098-080		COIL, 2.2UH
C462	87-010-248-080		CAP, ELECT 220-10V	L604	87-003-098-080		COIL, 2.2UH
C463	87-010-197-080		CAP, CHIP 0.01 DM	L606	87-003-098-080		COIL, 2.2UH
C465	87-010-404-080		CAP, ELECT 4.7-50V	L607	87-003-098-080		COIL, 2.2UH
C466	87-012-368-080		C-CAP,S 0.1-50 F	L608	87-003-098-080		COIL, 2.2UH
C467	87-010-263-080		CAP, ELECT 100-10V	L609	87-003-098-080		COIL, 2.2UH
C469	87-012-154-080		C-CAP,S 150P-50 CH	LED602	88-CD6-630-010		LED,9341D RED
C470	87-010-544-080		CAP, ELECT 0.1-50V	LED606	88-CD6-630-010		LED,9341D RED
C471	87-012-368-080		C-CAP,S 0.1-50 F	LED607	88-CD6-630-010		LED,9341D RED
C472	87-015-785-080		C-CAP, 0.1-25 Z F	LED608	88-CD6-630-010		LED,9341D RED
C473	87-012-368-080		C-CAP,S 0.1-50 F	LED610	88-CD6-631-010		LED,934GD GRN
C474	87-015-785-080		C-CAP, 0.1-25 Z F	LED611	87-CD8-616-010		LED,SA-36-11 HWA-11.0
C475	87-010-197-080		CAP, CHIP 0.01 DM	S601	87-A91-829-080		SW,TACT SKQNAED010
C476	87-010-236-080		CAP,E 1000-10 SME	S602	87-A91-829-080		SW,TACT SKQNAED010
C477	87-010-197-080		CAP, CHIP 0.01 DM	S603	87-A91-829-080		SW,TACT SKQNAED010
C478	87-010-263-080		CAP, ELECT 100-10V	S604	87-A91-829-080		SW,TACT SKQNAED010
C479	87-010-197-080		CAP, CHIP 0.01 DM	S605	87-A91-829-080		SW,TACT SKQNAED010
C480	87-010-221-080		CAP, ELECT 470-10V	S609	87-A91-829-080		SW,TACT SKQNAED010
C481	87-010-405-080		CAP, ELECT 10-50V	S611	87-A91-829-080		SW,TACT SKQNAED010
C482	87-010-405-080		CAP, ELECT 10-50V	X601	87-030-273-010		VIB,XTAL 32.768K5PPM
C489	87-012-368-080		C-CAP,S 0.1-50 F	X602	87-030-376-080		VIB,CER CSA5.76MG200
C490	87-012-368-080		C-CAP,S 0.1-50 F				
C491	87-010-197-080		CAP, CHIP 0.01 DM	TUNER C.B			
C492	87-010-221-080		CAP, ELECT 470-10V	C1	87-010-314-080		C-CAP,S 22P-50V
C493	87-010-197-080		CAP, CHIP 0.01 DM	C2	87-010-316-080		C-CAP,S 33P-50 CH
C494	87-010-197-080		CAP, CHIP 0.01 DM	C3	87-010-314-080		C-CAP,S 22P-50V
C501	87-012-368-080		C-CAP,S 0.1-50 F	C4	87-010-148-080		C-CAP,S 4P-50 C CH GRM
C502	87-010-322-080		C-CAP,S 100P-50 CH	C5	87-010-378-080		CAP, ELECT 10-16V
C503	87-010-322-080		C-CAP,S 100P-50 CH	C7	87-012-156-080		C-CAP,S 220P-50 J CH GRM
C504	87-010-322-080		C-CAP,S 100P-50 CH	C8	87-010-197-080		CAP, CHIP 0.01 DM
C505	87-010-322-080		C-CAP,S 100P-50 CH	C9	87-010-311-080		CAP 12P
C506	87-010-322-080		C-CAP,S 100P-50 CH	C10	87-010-197-080		CAP, CHIP 0.01 DM
C510	87-012-368-080		C-CAP,S 0.1-50 F	C11	87-010-152-080		C-CAP,S 8P-50 CH
C831	87-010-198-080		CAP, CHIP 0.022	C12	87-010-314-080		C-CAP,S 22P-50V
CN202	8A-CH4-689-010		CONN,3P V 2.5	C13	87-010-322-080		C-CAP,S 100P-50 CH
CN205	87-A60-109-010		CONN,2P V S2M-2W	C14	87-010-148-080		C-CAP,S 4P-50 C CH GRM
CN301	8A-CH4-689-010		CONN,3P V 2.5	C15	87-016-669-080		C-CAP,S 0.1-25 K B
CN401	87-A60-424-010		CONN,16P V TOC-B	C16	87-010-178-080		CHIP CAP 1000P
CN403	87-099-201-010		CONN,8P 6216 H	C17	87-016-669-080		C-CAP,S 0.1-25 K B
CN802	8A-CH4-687-010		CONN,4P V 2.5	C18	87-010-197-080		CAP, CHIP 0.01 D M
CNA402	8A-CD9-625-010		CONN ASSY,6P CD-ME	C19	87-016-669-080		C-CAP,S 0.1-25 K B
FC401	8A-CD9-621-010		FF-CABLE, 16P CD-RF	C20	87-010-400-080		CAP, ELECT 0.47-50V
FC403	8A-CD9-622-010		FF-CABLE, 8P CD-FR	C21	87-010-403-080		CAP, ELECT 3.3-50V

REF	PART NO.	KANRI NO.	DESCRIPTION	PART NO.	KANRI NO.	DESCRIPTION
C22	87-010-1	80	CAP, .01 DM			
C24	87-010-1	80	C-CAP, 0-50 B			
C25	87-010-1	80	C-CAP, 0-50 B			
C26	87-016	80	C-CAP, 7-16F	87-A60-685-010		CONN, 4P H WHT EH
C27	87-016	80	C-CAP, 7-16F	87-A60-114-010		CONN, 4P H S2M-4WR
				87-CD9-628-010		CONN ASSY, 3P MA-HP
				87-A60-569-010		JACK, HTJ-035-18
C28	87-016	80	C-CAP, 7-16F	87-A91-829-080		SW, TACT SKQNAED010
C29	87-016	80	C-CAP, 7-16F			
C30	87-016	80	CAP, 220-10V			
C31	87-016	80	CAP, 22-16V	87-A91-829-080		SW, TACT SKQNAED
C32	87-016	80	CAP, .01 DM	87-A91-829-080		SW, TACT SKQNAED
				87-A91-829-080		SW, TACT SKQNAED
C33	87-016	80	CAP, .01 DM			
C34	87-016	80	CAP, .01 DM			
C35	87-016	80	CAP, .01 DM			
C36	87-016	80	CAP, E 100-10V			
C37	87-016	80	CAP, C .01 DM			
				87-192-080		
				87-192-080		
C51	87-016	80	CAP, C .01 DM			
C56	87-016	80	C-CAP, 50 CH			
CF1	87-016	80	FLTR, AL CFAL-455			
CF2	87-016	80	FILTER, 10.7MA5-A			
CF3	87-016	80	FILTER, 10.7MA5-A			
				87-A90-092		
CN2	87-016	80	CONN, 6P 2M-6WR			
D3	87-016	80	C-VARI- HVU202A			
L2	87-016	80	COIL, FM (ACD)			
L3	87-016	80	BAR-ANT 2B-ACD (COI)			
L4	87-016	80	COIL, FM EX (ACD)			
				VOLTAGE C.B		
L5	87-016	80	COIL, FM EX (ACD)	△ SW901	87-A91-369-010	2 2 2 SDK
L6	87-016	80	COIL, AM (TOKO)			
L7	87-016	80	COIL, AM (ACD)			
L8	87-016	80	COIL, FM (TOKO)			
L9	87-016	80	COIL, FM (ACD)			
				MOTOR C.B		
				M2	9X-262-576-910	MOTOR
				PIN3	91-564-722-110	CON
				SW1	91-572-085-120	
L10	87-016	80	COIL, 10T (ECS)			
PVC1	87-016	80	TUN-CAP, 100-10V			
SW1	87-016	80	SW, SL-2			

チップ抵抗

抵抗部品コード
Resistor Part



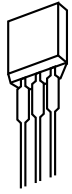
抵抗部品コード
Resistance Code

桁表示
Figure
抵抗

Chip resistor

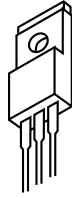
	L	W		
	1.6	0.8	0.45	108
		1.25	0.45	118
	3.2	1.6		128

TRANSISTOR ILLUSTRATION



E C B

2SA933SS
2SC1740SS
DTC114TS
DTC124XS



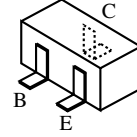
B C E

2SB1370E

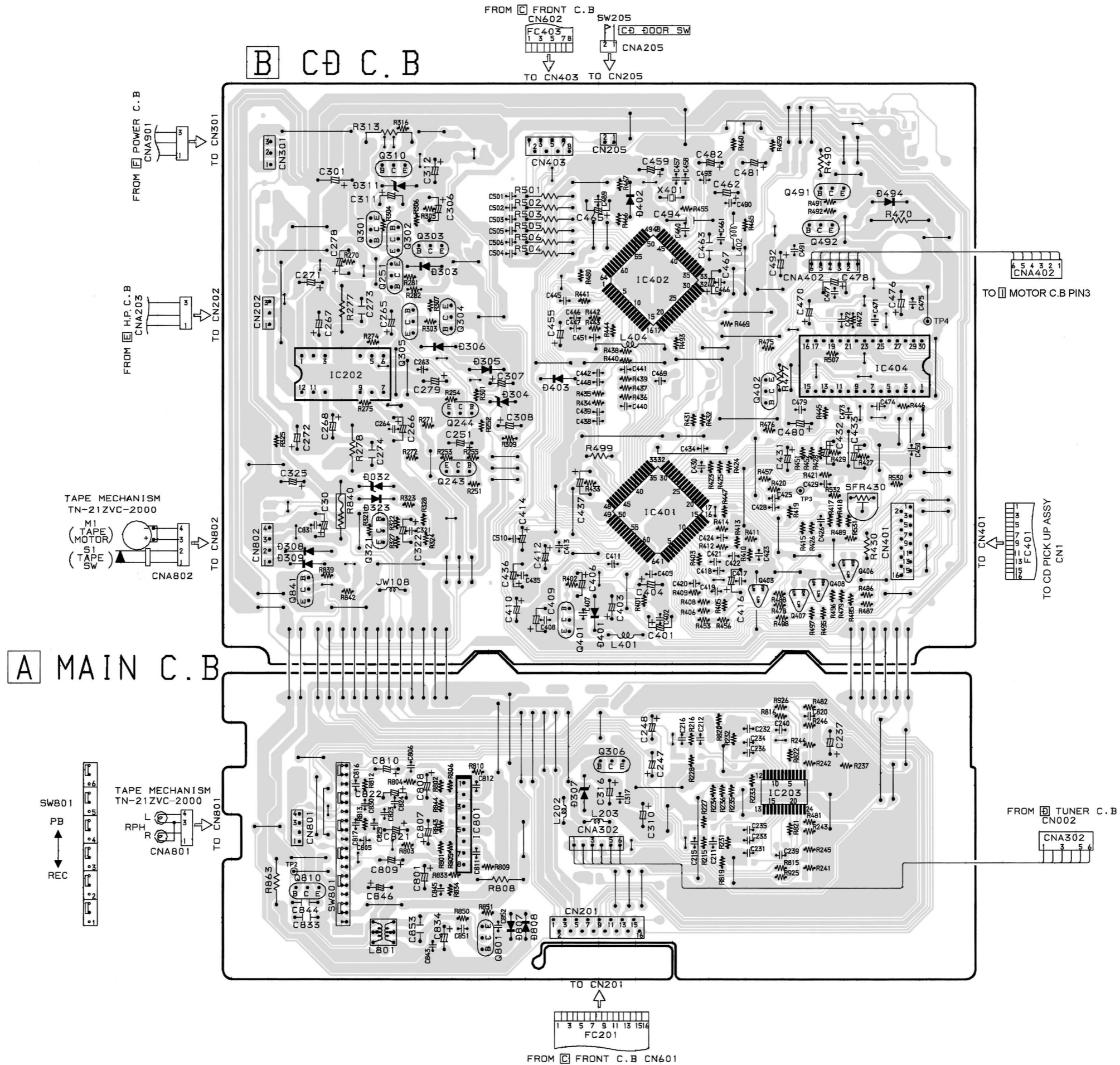


E C B

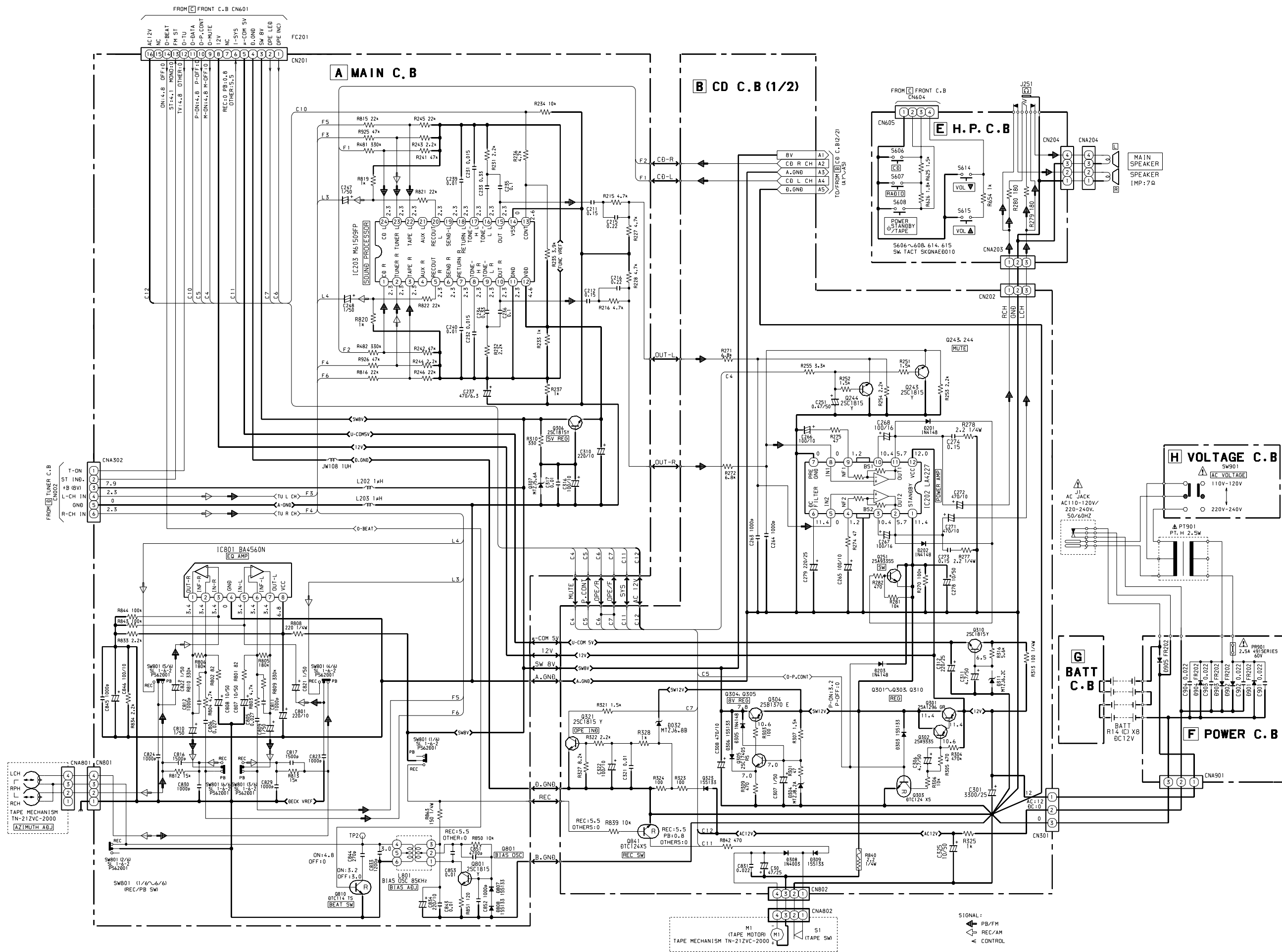
2SA1296GR
2SA1318TU
2SC1815Y

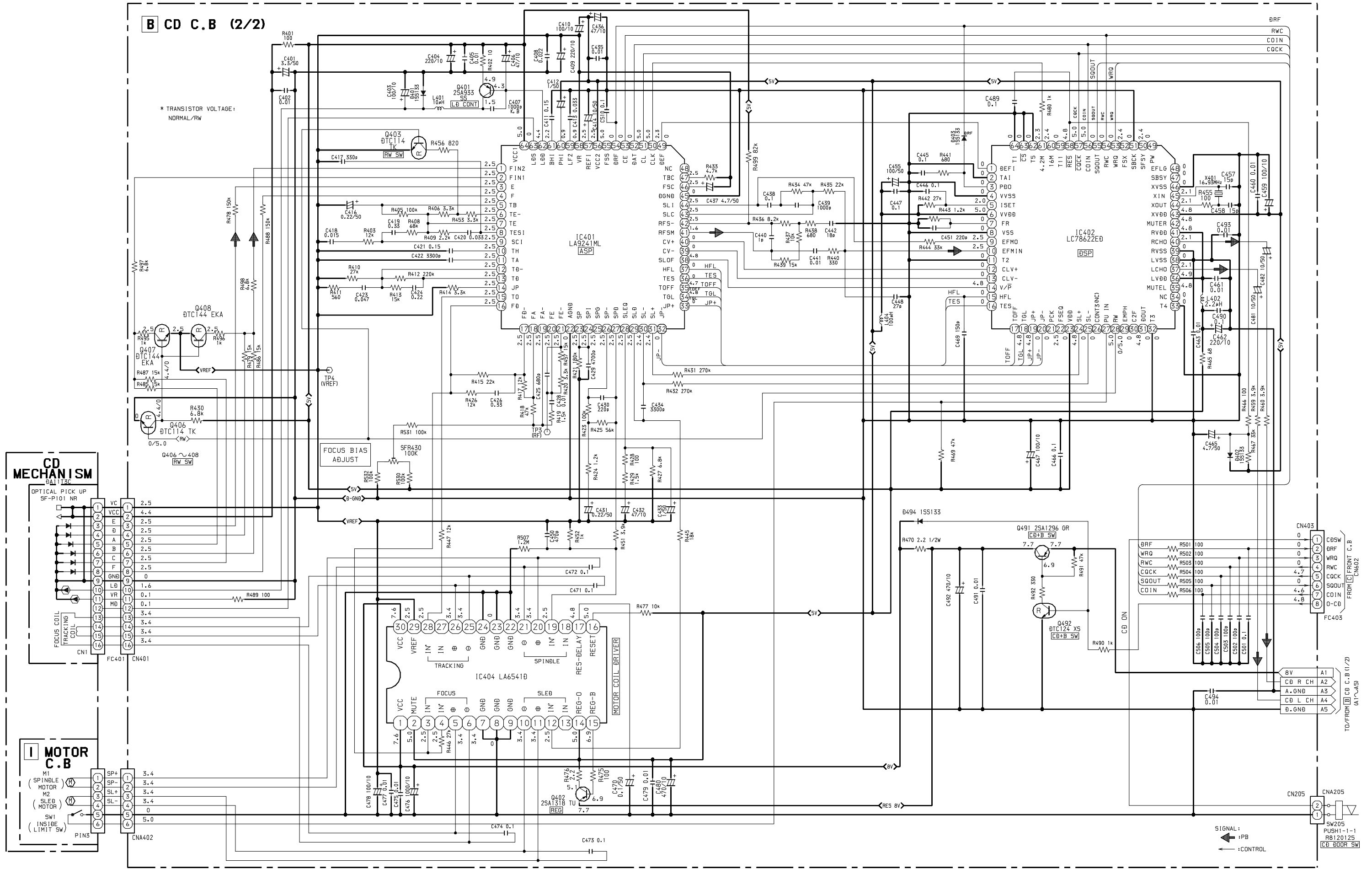


2SC2714
DTC114TK
DTC114YK
DTC114YS
DTC144EK



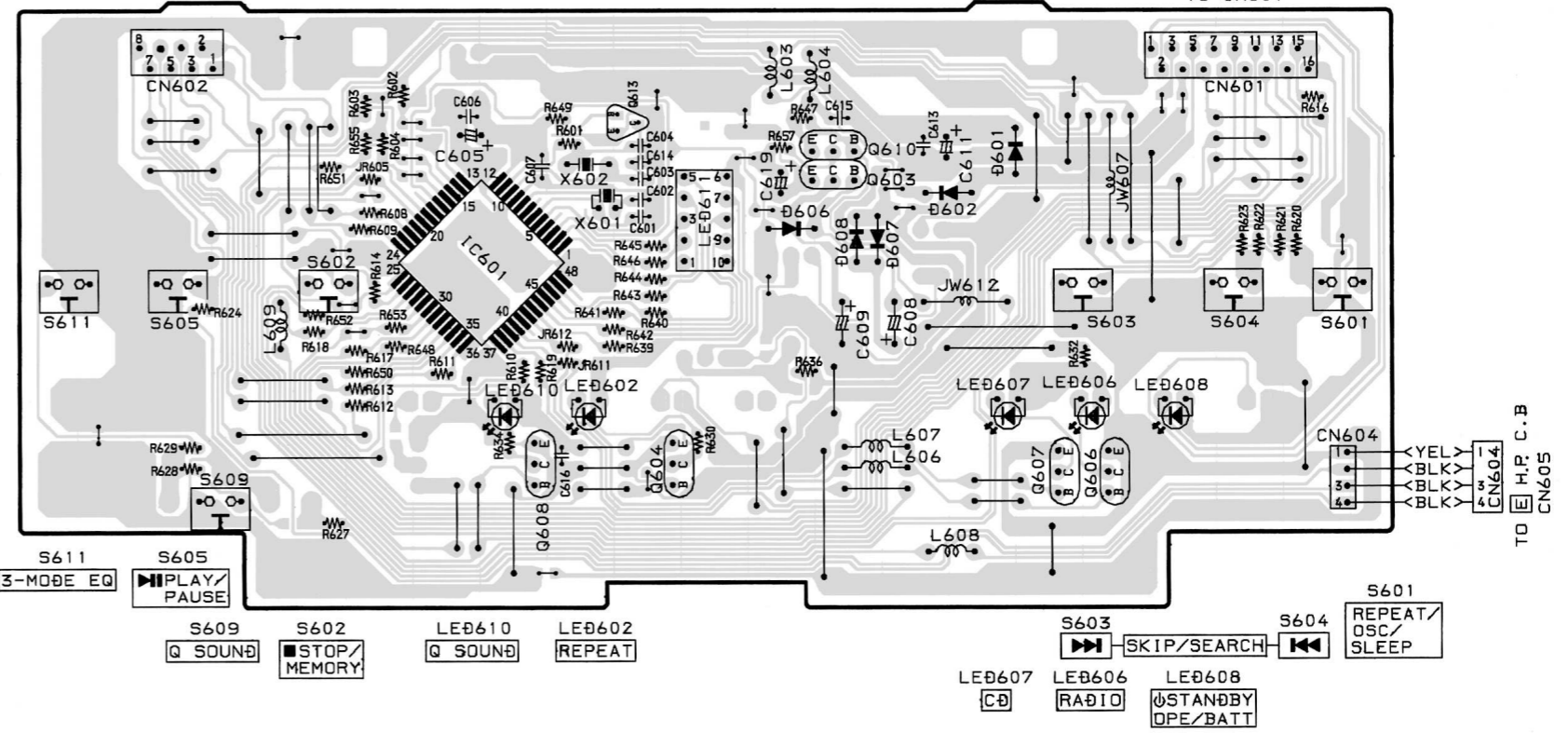
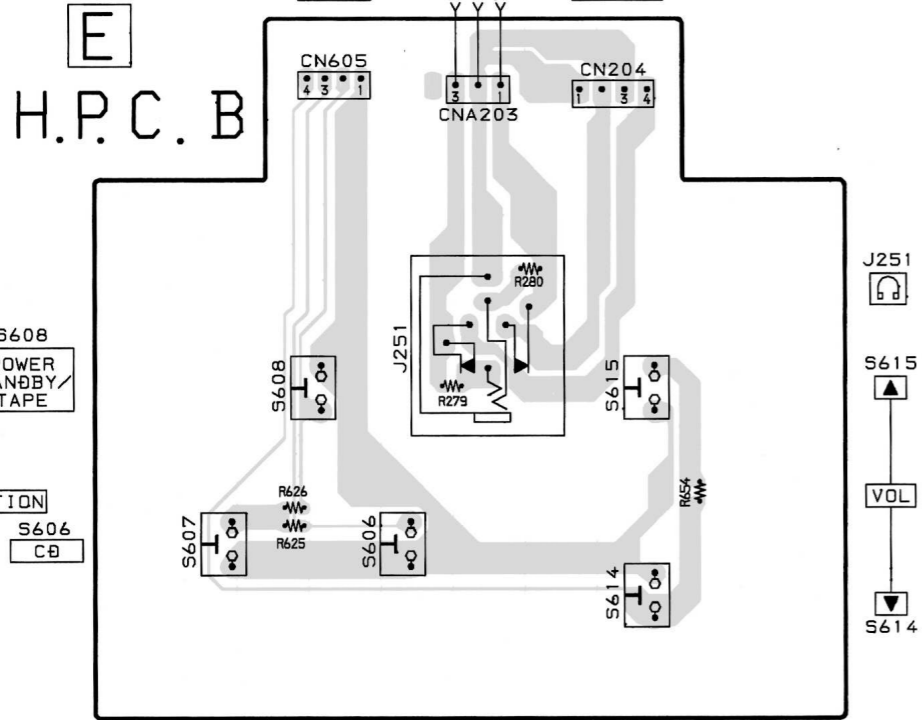
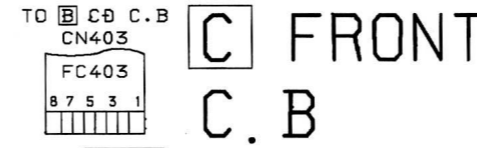
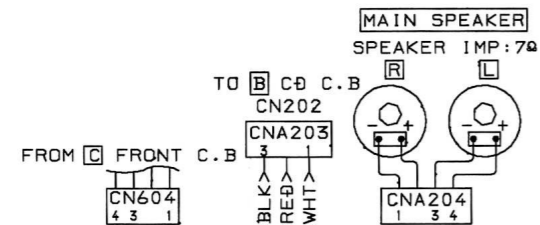
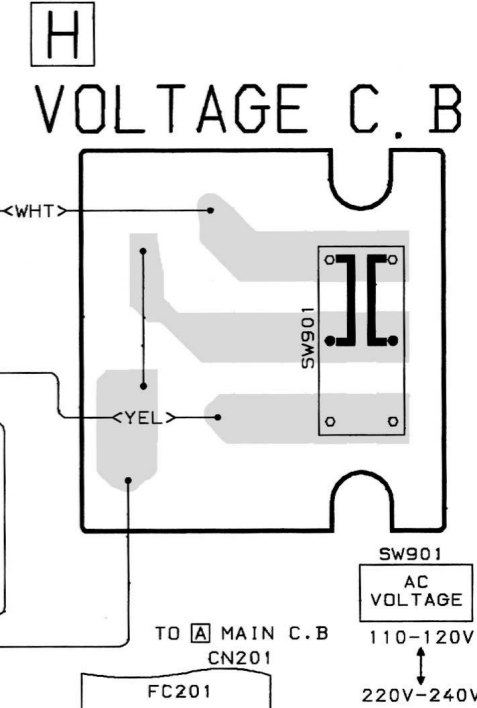
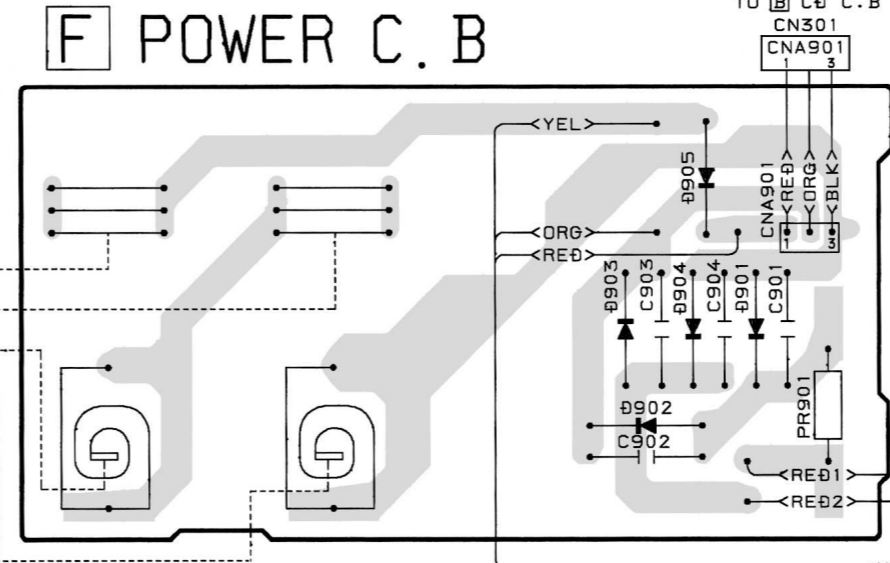
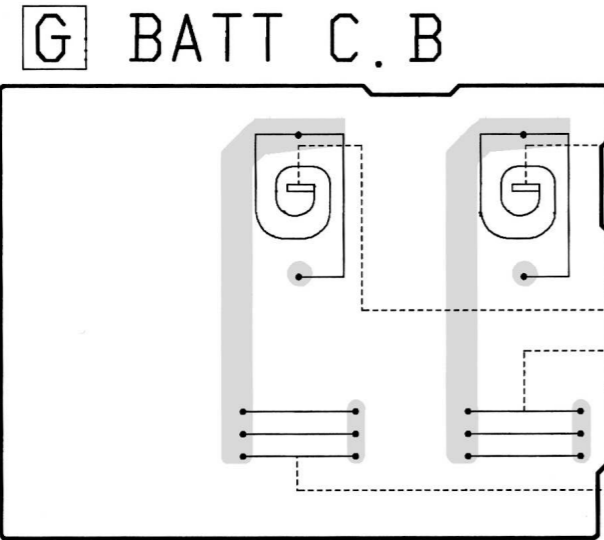
SCHEMATIC DIAGRAM - 1 (MAIN / CD : 1 / 2 / H.P. / POWER / BATT / VOLTAGE)



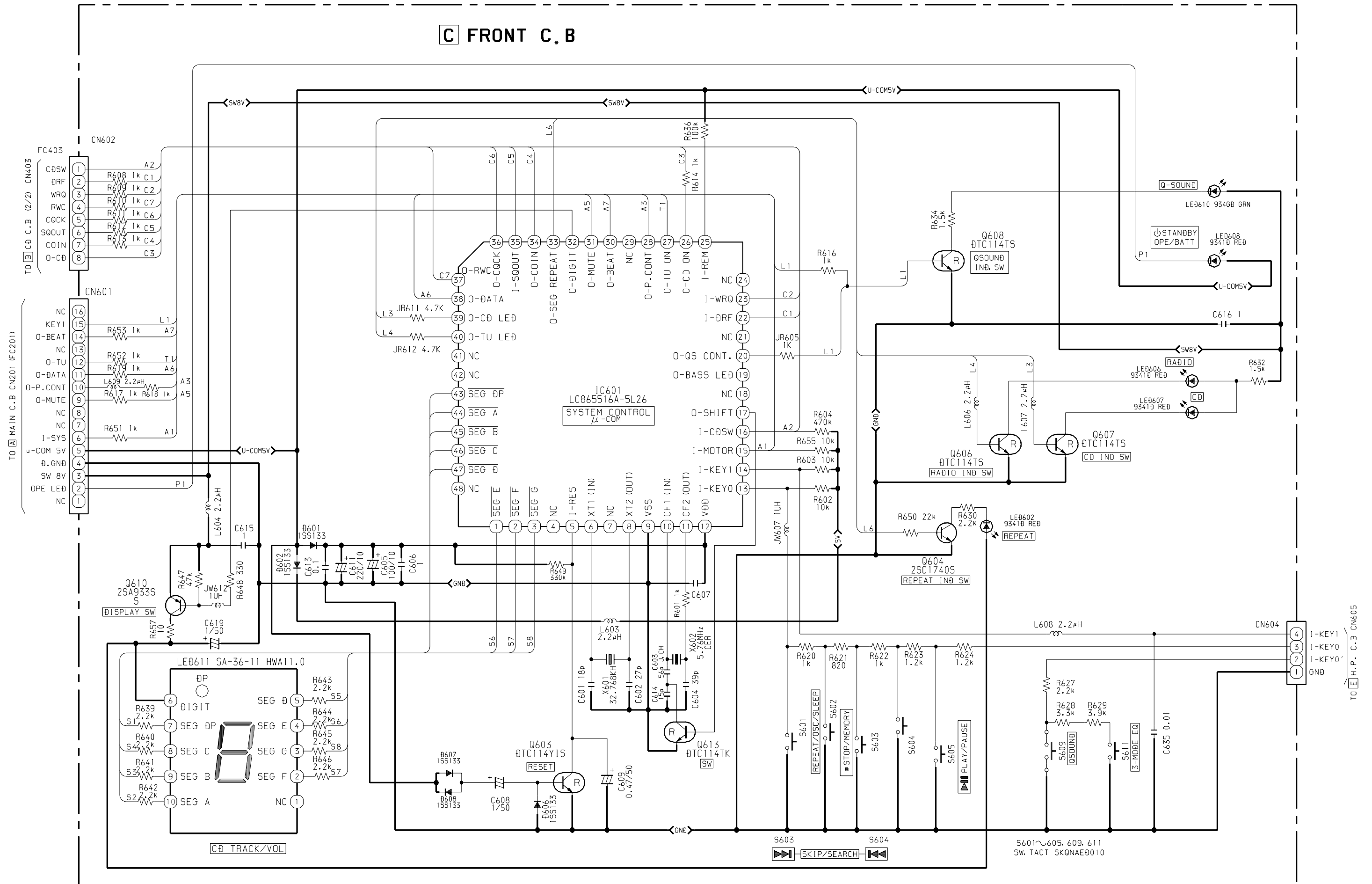


32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

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SCHEMATIC DIAGRAM - 3 (FRONT)

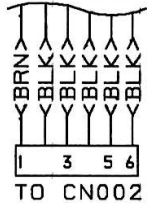


WIRING - 3 (TUNER)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
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TO [A] MAIN C.B
CNA302



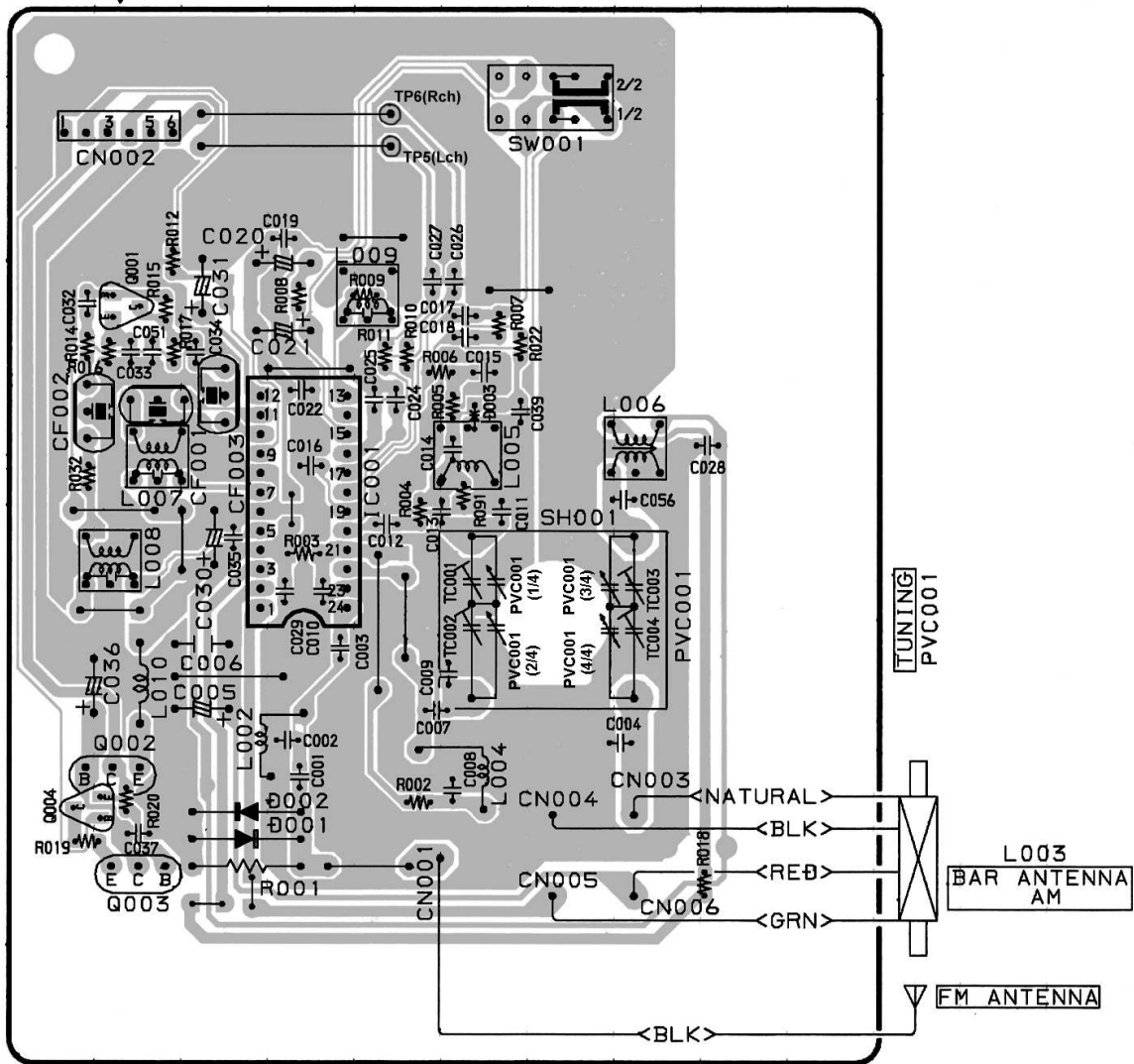
TO CN002



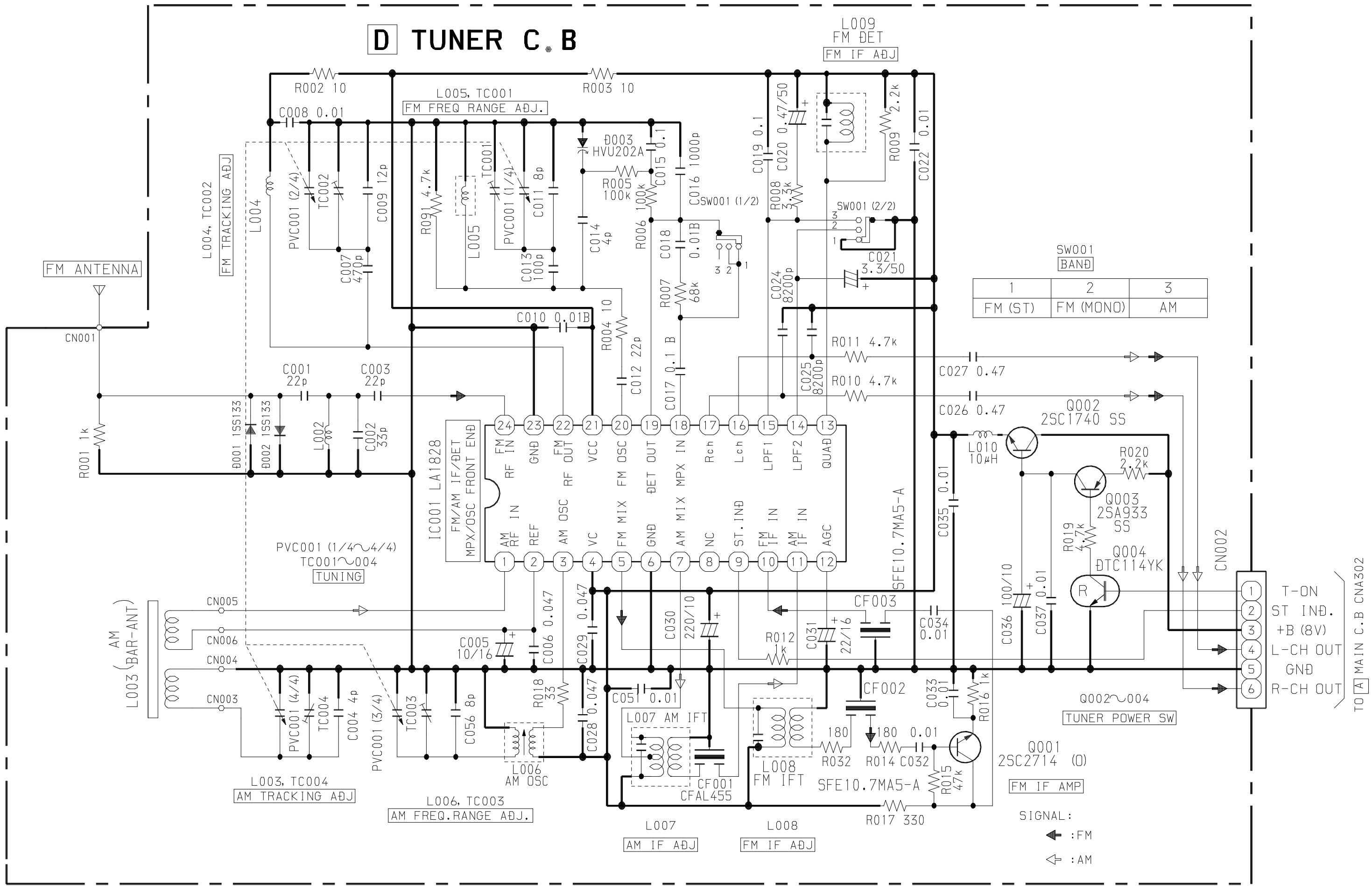
TUNER C.B

SW001
BAND

AM ↔ MONO FM ↔ ST FM



SCHEMATIC DIAGRAM - 4 (TUNER)

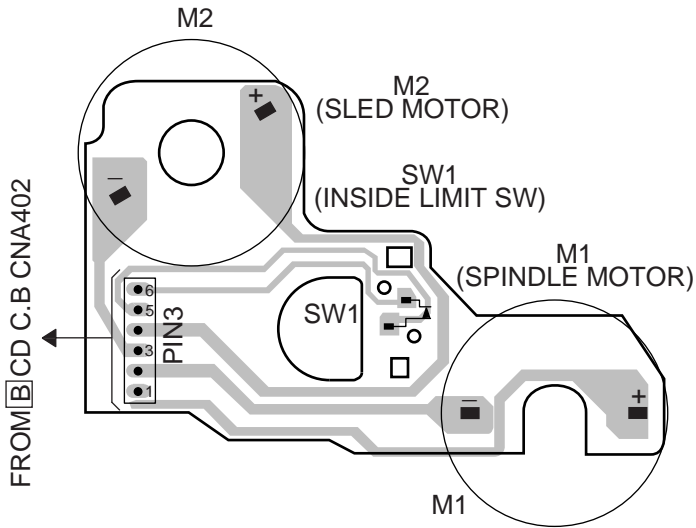


WIRING – 4 (MOTOR)

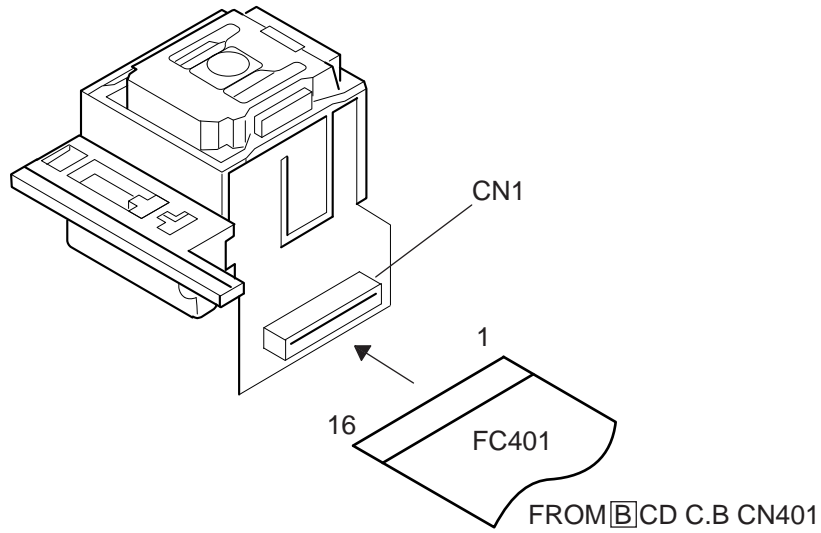
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
----	----	----	----	----	----	---	---	---	---	---	---	---	---	---

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I MOTOR C.B

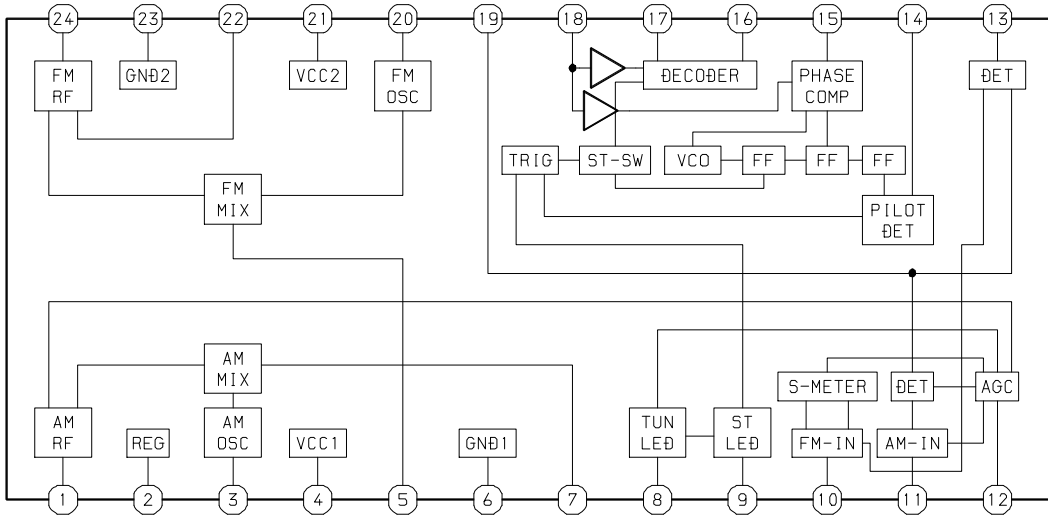


PICK UP ASSY
SF-P101NR

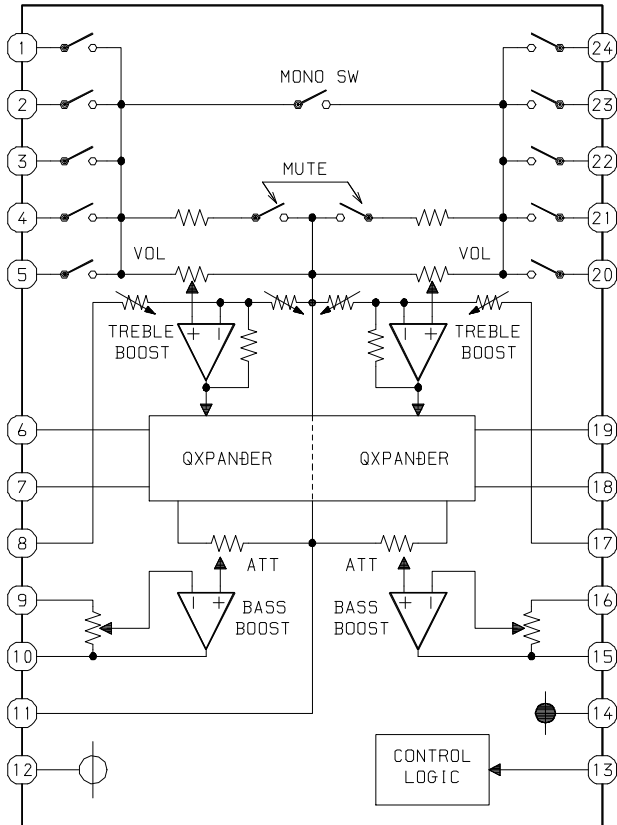


IC BLOCK DIAGRAM

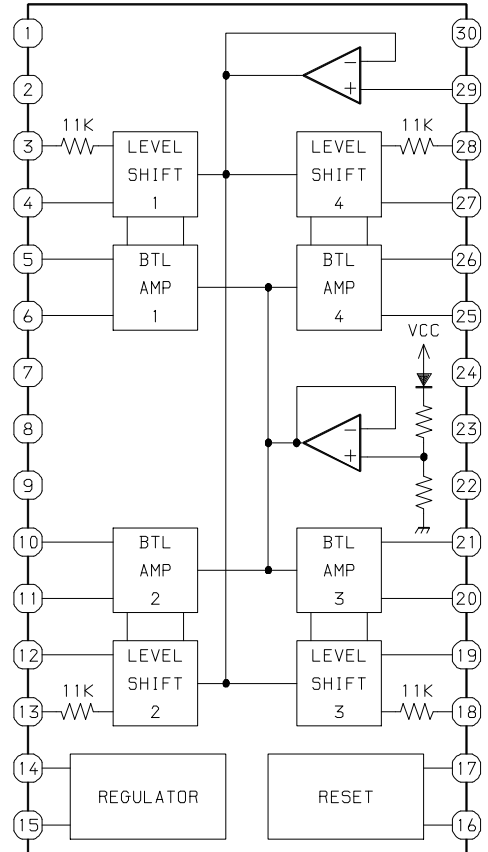
IC, LA1828



IC, M61509FP



IC, LA6541D



IC DESCRIPTION

IC, LC78622ED

Pin No.	Pin Name	I/O	Description
1	DEFI	I	Defect detection signal (DEF) input.
2	TAI	I	Test input. A pull-down resistor is built in. Must be connected to 0V.
3	PDO	O	External VCO control phase comparator output.
4	VVSS	–	Internal VCO ground. Must be connected to 0V.
5	ISET	O	PDO output current adjustment resistor connection.
6	VVDD	–	Internal VCO power supply.
7	FR	I	VCO frequency range adjustment.
8	VSS	–	Digital system ground. Must be connected to 0V.
9	EFMO	O	Slice level control; EFM signal output.
10	EFMIN	I	Slice level control; EFM signal input.
11	T2	I	Test input. A pull-down resistor is built in. Must be connected to 0V.
12	CLV+	O	Disc motor control output.
13	CLV–		Three-value output is also possible when specified by microprocessor command.
14	V/P	O	Rough servo/phase control automatic switching monitor output. Outputs a high level during rough servo and a low level during phase control.
15	HFL	I	Track detection signal input. This is a Schmitt input.
16	TES	I	Tracking error signal input. This is a Schmitt input.
17	TOFF	O	Tracking off output.
18	TGL	O	Tracking gain switching output. Increase the gain when low.
19	JP+	O	Track jump output.
20	JP–		Three-value output is also possible when specified by microprocessor command.
21	PCK	O	EFM data playback clock monitor. Outputs 4.3218 MHz when the phase is locked. (Not used)
22	FSEQ	O	Synchronization signal detection output. Outputs a high level when the synchronization signal detected from the EFM signal and the internally generated synchronization signal agree. (Not used)
23	VDD	–	Digital system power supply.
24	SL+	O	Serial data command sled signal output terminal from microprocessor.
25	SL–		
26	CONT3	–	Not used.
27	PU IN	I	CD pickup inside limit switch.
28	RW	O	Serial data command sled output terminal from microprocessor.
29	EMPH	O	De-emphasis monitor pin. A high level indicates playback of a de-emphasis disk. (Not used)
30	C2F	O	C2 flag output. (Not used)
31	DOUT	O	Digital output (EIAJ format). (Not used)
32	T3	I	Test input. A pull-down resistor is built in. Must be connected to 0V.
33	T4		
34	NC	–	Unused. Must be left open.
35	MUTEL	O	Left channel one-bit D/A converter mute output. (Not used)
36	LVDD	–	Left channel one-bit D/A converter power supply.
37	LCHO	O	Left channel one-bit D/A converter output.

Pin No.	Pin Name	I/O	Description
38	LVSS	–	Left channel one-bit D/A converter ground. Must be connected to 0V.
39	RVSS	–	Right channel one-bit D/A converter ground. (Must be connected to 0V.)
40	RCHO	O	Right channel one-bit D/A converter output.
41	RVDD	–	Right channel one-bit D/A converter power supply.
42	MUTER	O	Right channel one-bit D/A converter mute output. (Not used)
43	XVDD	–	Crystal oscillator power supply.
44	XOUT	O	Connections for a 16.9344 MHz crystal oscillator element.
45	XIN	I	
46	XVSS	–	Crystal oscillator ground. (Must be connected to 0V.)
47	SBSY	O	Subcode clock synchronization signal output. (Not used)
48	EFLG	O	C1, C2, single and double error correction monitor. (Not used)
49	PW	O	Subcode P, Q, R, S, T, U and W output. (Not used)
50	SFSY	O	Subcode frame synchronization signal output. This signal falls when the subcode are in standby state. (Not used)
51	SBCK	I	Subcode readout clock input. This is a Schmitt input.
52	FSX	O	Output pin for the 7.35 kHz synchronization signal divided from the crystal oscillator. (Not used)
53	WRQ	O	Subcode Q output standby output.
54	RWC	I	Read/write control input. This is a Schmitt input.
55	SQOUT	O	Subcode Q output.
56	COIN	I	Command input pin from control microprocessor.
57	$\overline{\text{CQCK}}$	I	Input for both the command input acquisition clock and the SQOUT pin subcode readout clock input pin. This is Schmitt input.
58	$\overline{\text{RES}}$	I	Reset input. This pin must be set low briefly after power is first applied.
59	T11	O	Test output. Leave open. (Normally output a low level). (Not used)
60	16M	O	16.9344 MHz output. (Not used)
61	4.2M	O	4.2336 MHz output.
62	T5	I	Test input. A pull-down resistor is built-in. (Must be connected to 0V.)
63	$\overline{\text{CS}}$	I	Chip select input. A pull-down resistor is built-in. (Must be connected to 0V if not controlled.)
64	T1	I	Test input. No pull-down resistor. (Must be connected to 0V.)

Pin No.	Pin Name	I/O	Description
1	FIN2	O	For the connection of the pickup photodiode. Addition to the FIN1 pin creates an RF signal and subtraction from it create an EF signal.
2	FIN1	O	For the connection of the pickup photodiode.
3	E	O	For the connection of the pickup photodiode. Subtraction from the F pin creates a TE signal.
4	F	O	For the connection of the pickup photodiode.
5	TB	I	Inputs the DC components in the TE signal.
6	TE-	O	For the connection of a resistor which sets the gain of the TE signal between this pin and the TE pin.
7	TE	O	TE signal output.
8	TESI	I	TES (track error sense) comparator input. The TE signal is passed through a BPF.
9	SCI	I	Shock detection input.
10	TH	I	Sets the time constant for the tracking gain.
11	TA	O	TA amp output.
12	TD-	I	Composes the tracking phase compensation constant between the TD and VR pins.
13	TD	O	Sets the tracking phase compensation.
14	JP	I	Sets the amplitude of the tracking jump signal (kick pulses).
15	TO	O	Tracking control signal output.
16	FD	O	Focusing control signal output.
17	FD-	I	Composes the focusing phase compensation constant between the FD and FA pins.
18	FA	O	Composes the focusing phase compensation constant between the FD- and FA- pins.
19	FA-	I	Composes the focusing phase compensation constant between the FA and FE pins.
20	FE	O	FE signal output.
21	FE-	I	For the connection of a resistor which sets the gain of the FE signal between this pin and the TE pin.
22	AGND	O	Ground of analog signals.
23	SP	O	Single-ended output of the signals input to the CV+ and CV- pins.
24	SPI	I	Spindle amp input.
25	SPG	I	For the connection of a resistor which sets the gain in the spindle 12cm mode.
26	SP-	I	For the connection of the spindle phase compensation constant with the SPD pin.
27	SPD	O	Spindle control signal output.
28	SLEQ	I	For the connection of sled phase compensation constant.
29	SLD	O	Sled control signal output.
30	SL-	I	Sled feed signal input from the microprocessor.
31	SL+		
32	JP-	I	Tracking signal input from the DSP.
33	JP+		
34	TGL	I	Tracking gain control signal input from the DSP. Low gain when TGL is "H".
35	TOFF	I	Tracking off control signal input from the DSP. Off when TOFF is "H".
36	TES	O	TES signal output to the DSP.

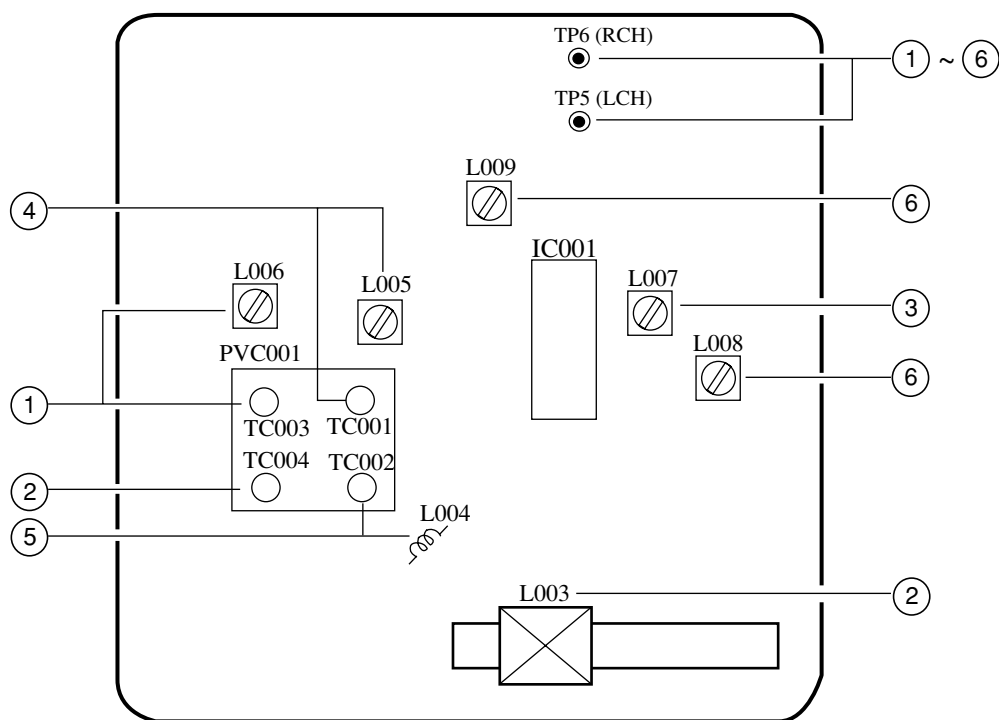
Pin No.	Pin Name	I/O	Description
37	HFL	O	The HFL (high frequency level) signal is used to judge whether the main beam is positioned on the pit or on the mirror.
38	SLOF	I	Sled servo off control input.
39	CV-	I	CLV error signal input from the DSP.
40	CV+		
41	RFSM	O	RF output.
42	RFS-	O	Sets the RF gain and the EFM signal's 3T compensation constant together with the RFSM pin.
43	SLC	O	The SLC (slice level control) signal is output to control the DSP's data slice level of the RF waveform.
44	SL1	I	Input to control the DSP's data slice level.
45	DGND	-	Ground of digital signals.
46	FSC	O	Output for the focus search smoothing capacitor.
47	TBC	I	The TBC (tracking balance control) signal sets the EF balance variation range.
48	NC	-	Not connected.
49	DEF	O	Disc defect detection output.
50	CLK	I	Reference clock input. 4.23 MHz is input from the DSP.
51	CL	I	Microprocessor command clock input.
52	DAT	I	Microprocessor command data input.
53	CE	I	Microprocessor chip enable input.
54	DRF	O	DRF (detect RF) is an output to detect the RF level.
55	FSS	I	The FSS (focus search select) signal switches the focus search modes (+/-search / +search with respect to the reference voltage).
56	VCC2	-	VCC of servo and digital circuits.
57	REF1	-	For the connection of bypass capacitor for the reference voltage.
58	VR	O	Reference voltage output.
59	LF2	-	Sets the time constant for disc defect detection.
60	PHI	-	For the connection of a capacitor to hold the RF signal peak.
61	BHI	-	For the connection of a capacitor to hold the RF signal bottom.
62	LDD	O	APC circuit output.
63	LDS	I	APC circuit input.
64	VCC1	-	VCC of RF signal circuits.

IC, LC865516A-5L26

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{SEG E}}$	O	SEG E control.
2	$\overline{\text{SEG F}}$	O	SEG F control.
3	$\overline{\text{SEG G}}$	O	SEG G control.
4	NC	–	Not connected.
5	I-RES	I	Microprocessor reset input.
6	XT1 (IN)	I	Connected to an external 32.768 kHz crystal oscillator.
7	NC	–	Not connected.
8	XT2 (OUT)	O	Connected to an external 32.768 kHz crystal oscillator.
9	VSS	–	GND.
10	CF1 (IN)	I	Connected to an external 5.76 MHz ceramic filter.
11	CF2 (OUT)	O	Connected to an external 5.76 MHz ceramic filter.
12	VDD	–	Microprocessor power supply (+5 V).
13	I-KEY0	I	Key AD input. (AD)
14	I-KEY1	I	Key AD input. (AD)
15	I-MOTOR	I	Deck status input. (AD)
16	I-CDSW	I	CD door switch status input.
17	O-SHIFT	O	Main clock shift output.
18	NC	–	Not connected.
19	O-BASS LED	O	BASS LED ON/OFF control output. (Not used)
20	O-QS CONT	O	Q sound LED ON/OFF control output.
21	NC	–	Not connected.
22	I-DRF	I	CD RF level detection input.
23	I-WRQ	I	CD subcode Q standby input.
24	NC	–	Not connected.
25	I-REM	I	Remote control input.
26	O-CD ON	O	CD power control output.
27	O-TU ON	O	TU power control output.
28	O-P.CONT	O	The main power supply control output.
29	NC	–	Not connected.
30	O-BEAT	O	Beat sw control output.
31	O-MUTE	O	Main mute output.
32	O-DIGIT	O	7-segment LED power supply control output.
33	O-SEG REPEAT	O	REPEAT LED ON/OFF control output.
34	O-COIN	O	CD command output.
35	I-SQOUT	I	CD subcode Q input.
36	O-CQCK	O	CD command/CLK for subcode.
37	O-RWC	O	CD read/write control output.
38	O-DATA	O	Data output to M61509FP.
39	O-CD LED	O	LED ON/OFF control output for the CD function.
40	O-TU LED	O	LED ON/OFF control output for the TU function.
41	NC	–	Not connected.

Pin No.	Pin Name	I/O	Description
42	NC	–	Not connected.
43	$\overline{\text{SEG DP}}$	O	SEG DP control.
44	$\overline{\text{SEG A}}$	O	SEG A control.
45	$\overline{\text{SEG B}}$	O	SEG B control.
46	$\overline{\text{SEG C}}$	O	SEG C control.
47	$\overline{\text{SEG D}}$	O	SEG D control.
48	NC	–	Not connected.

D TUNER C.B



< TUNER SECTION >

1. AM Frequency Range Adjustment

- Test Point: TP5 (LCH), TP6 (RCH)
- Adjustment location: L006, TC003
- Method:

L006 515kHz
 TC003 1635kHz

2. AM Tracking Adjustment

- Test Point: TP5 (LCH), TP6 (RCH)
- Adjustment location: L003, TC004
- Method:

L003 600kHz
 TC004 1400kHz

3. AM IF Adjustment

- Test Point: TP5 (LCH), TP6 (RCH)
- Adjustment location: L007
- Method:

L007 455kHz

4. FM Frequency Range Adjustment

- Test Point: TP5 (LCH), TP6 (RCH)
- Adjustment location: L005, TC001
- Method:

L005 87MHz
 TC001 109MHz

5. FM Tracking Adjustment

- Test Point: TP5 (LCH), TP6 (RCH)
- Adjustment location: L004, TC002
- Method:

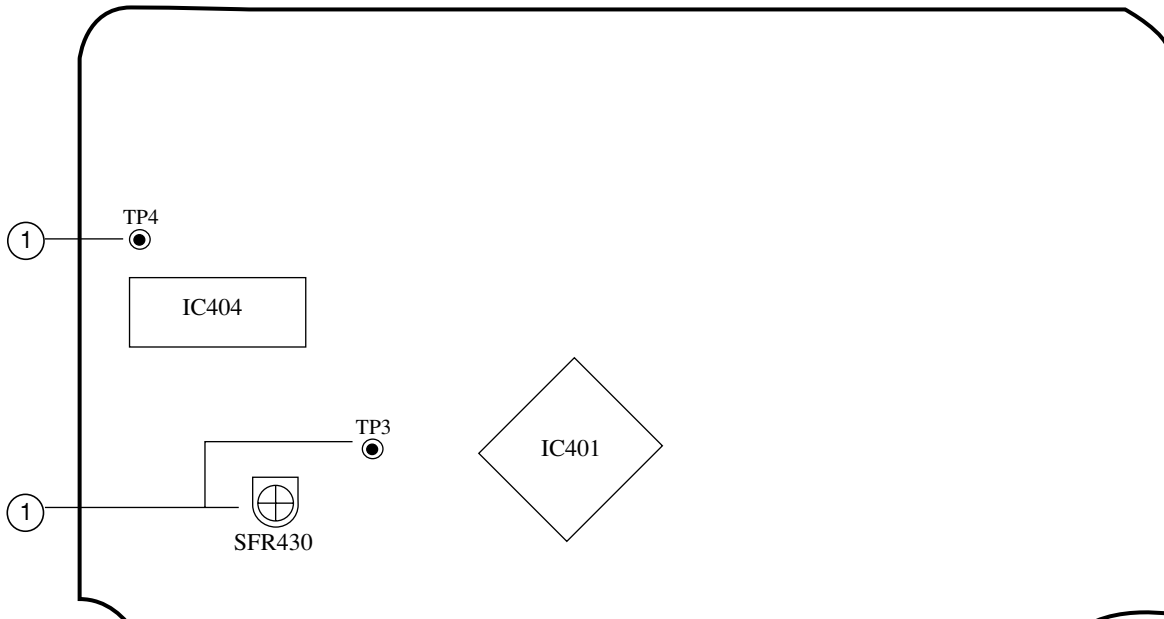
L004 88MHz
 TC002 108MHz

6. FM IF Adjustment

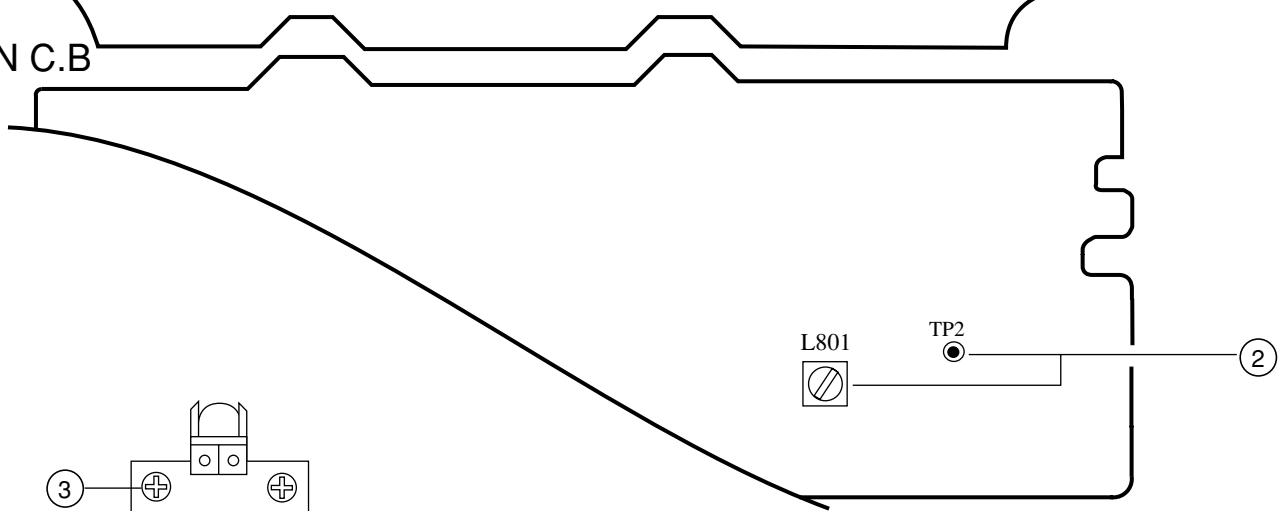
- Test Point: TP5 (LCH), TP6 (RCH)
- Adjustment location: L008, L009
- Method:

L008, L009 10.7MHz

B CD C.B

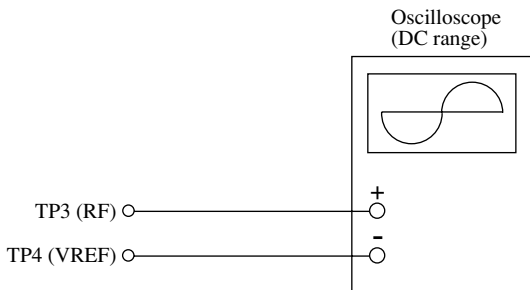


A MAIN C.B

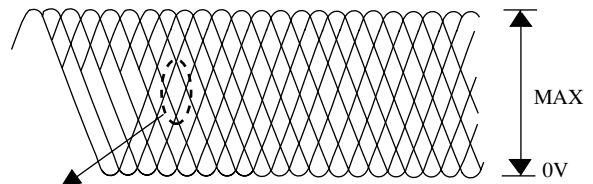


< CD SECTION >

1. Focus Bias Adjustment
Make the focus bias adjustment when replacing and repairing the optical block.



- 1) Connect an oscilloscope to the test point TP3 (RF) and TP4 (VREF).
- 2) Turn on the power switch.
- 3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
- 4) Adjust SFR430 so that RF signal of the test point TP3 (RF) is MAX and CLEAREST.



EYE PATTERN

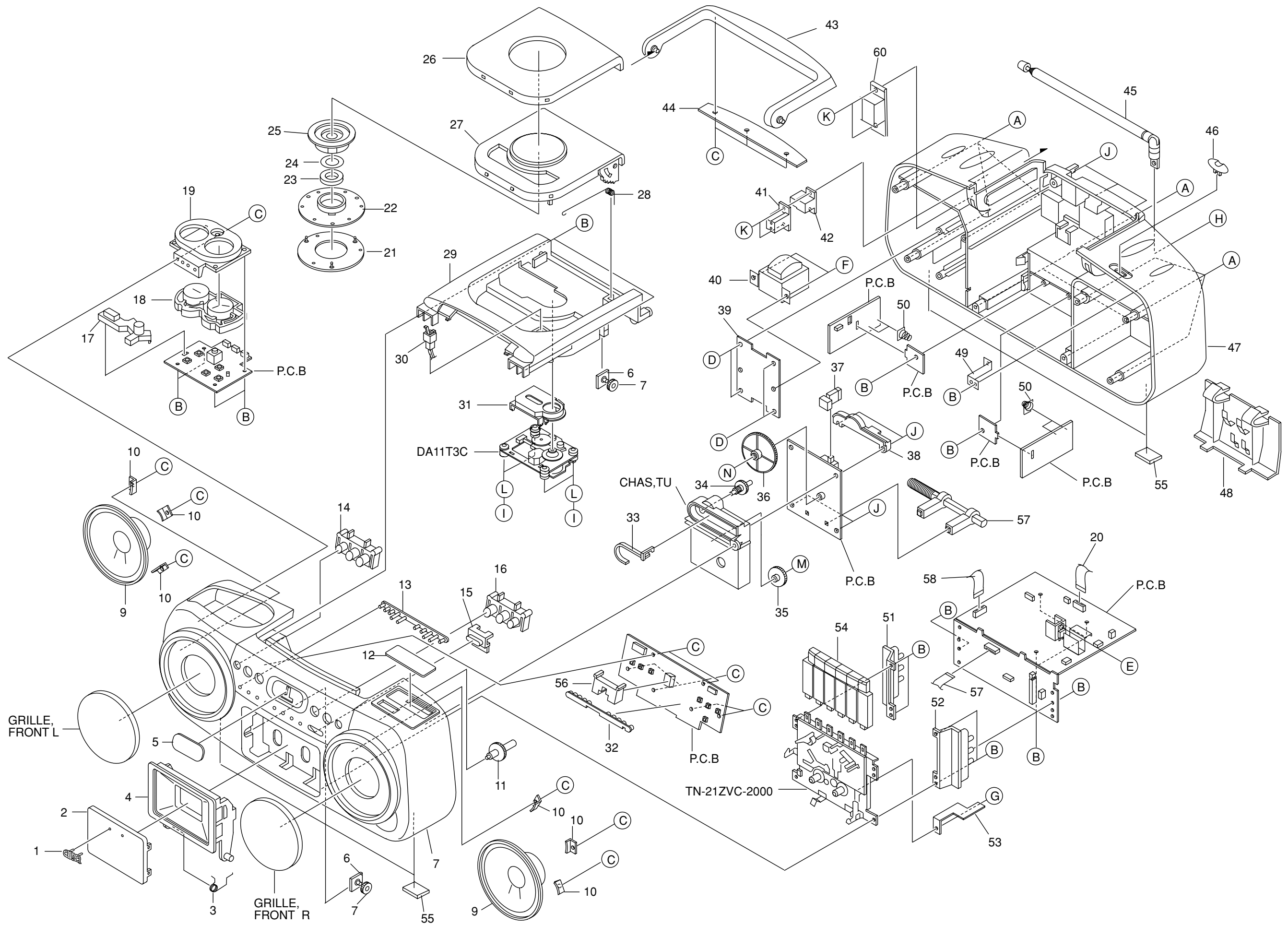
must be CLEAR and MAX

VOLT / DIV: 200mV
TIME / DIV: 0.5μs

< DECK SECTION >

2. Bias Adjustment
 - Test tape: TTA-630
 - Test Point: TP2
 - Adjustment location: L801
 - Method:

L801 85kHz±2kHz
3. Azimuth Adjustment
 - Settings:
 - Test tape: TTA-320
 - Test point: PHONE JACK
 - Adjustment location: Azimuth adjustment screw
 - Method: Play back the test tape and adjust the screw so that the output is maximum.



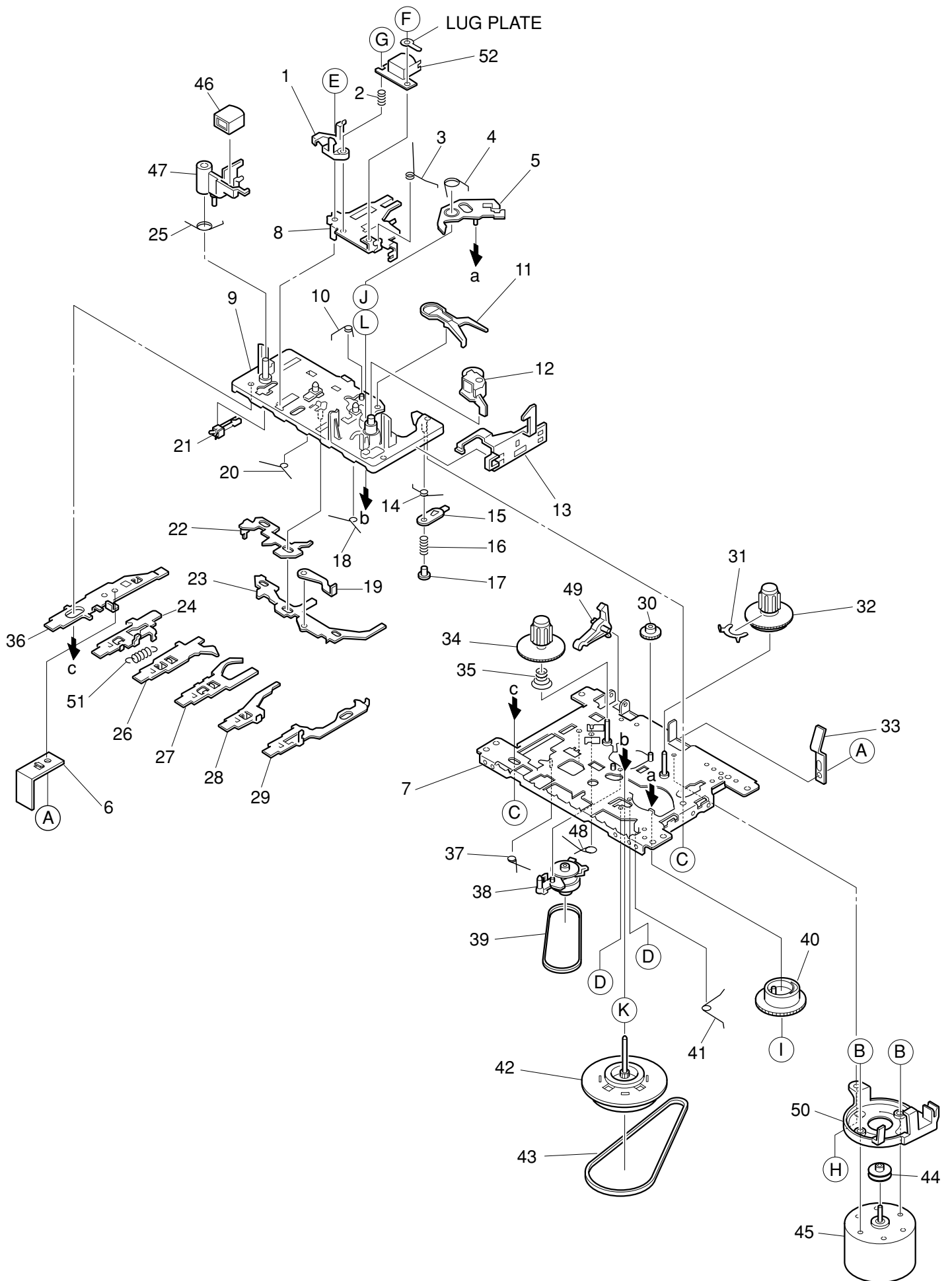
MECHANICAL PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-B00-010-010		BADGE,AIWA 30.5-5.2 S 2.5L	41	8Z-CD5-634-010		COVER,AC SOCKET
2	8A-CD9-009-010		WINDOW,CASS	△ 42	87-A60-178-010		JACK,AC E W/SW
3	8A-CD9-232-010		SPR-T,CASS	43	8A-CD9-012-010		HANDL,GRIP
4	8A-CD9-008-010		BOX,CASS	44	8A-CD9-011-010		HANDL,ARM
5	8A-CD9-033-010		WINDOW,LED	45	8Z-CH4-640-010		ANT,ROD
6	84-CD5-216-010		BRACKET	46	8A-CD9-027-010		KNOB,SL BAND
7	84-CD5-215-010		GEAR	47	8A-CD9-002-010		CABI,REAR
8	8A-CD9-061-010		CABI,FR A1 ASSY	48	8A-CD9-010-010		LID,BATT
9	88-CD9-626-010		SPKR,100 7OHM 3W	49	8A-CD9-221-010		HLDR,ANT
10	8A-CD9-222-010		HLDR,SPEAKER	50	87-CD6-213-010		SPR-C,BATT (-)
11	8A-CD9-026-010		KNOB,RTRY TU	51	8A-CD9-211-010		HLDR,PWB L
12	8A-CD9-037-010		WINDOW,TU HR	52	8A-CD9-212-010		HLDR,PWB R
13	8A-CD9-022-010		LENS,LED	53	8A-CD9-223-010		SPR-P,REC TN21
14	8A-CD9-015-010		BTN,CD A	54	8A-CD9-024-010		KEY,CASS TN21
15	8A-CD9-017-010		BTN,QSOUND	55	86-CT4-218-010		CUSHION,FOOT/PORON
16	8A-CD9-016-010		BTN,CD B	56	8A-CD9-201-010		HLDR,DISPLAY
17	8A-CD9-203-010		GUIDE,VOL	57	8A-CD9-620-010		FF-CABLE, 16P FR-MAIN
18	8A-CD9-014-010		BTN,VOL	58	8A-CD9-621-010		FF-CABLE, 16P CD-RF
19	8A-CD9-013-010		PANEL,VOL	59	8A-CD9-660-010		BAR,ANT MW 2B-ACO
20	8A-CD9-622-010		FF-CABLE, 8P CD-FR	△ 60	87-A91-369-010		SW,AC SL 2 2 2 SDKGA41700
21	8Z-CH4-212-010		RING,CHUCK	A	87-B10-242-010		UT2+3-30 W/O CR
22	8Z-CH4-211-010		BASE,CHUCK	B	87-741-096-410		UT2+3-10
23	87-036-368-010		MAGNET	C	87-B10-239-010		QT2+3-8 W/O CR
24	84-CD5-217-010		PLATE,MAGNET	D	87-661-097-410		TAPPING SCREW, VFT1+3-12
25	8Z-CH4-225-110		HLDR,CHUCK A(S)	E	87-751-094-410		VT2+3-6 W10SL0T
26	8A-CD9-007-010		WINDOW,CD	F	87-067-566-010		TAPPING SCREW, VFTT+3-6
27	8A-CD9-006-010		BOX,CD	G	87-571-033-410		TAPPING SCREW, VIT+2-4
28	8A-CD9-231-010		SPR-T,CD	H	87-255-096-410		U+3-10 NI
29	8A-CD9-005-010		CHAS,CD A	I	87-342-074-010		UT2+2.6-8
30	87-036-389-010		SW,PUSH LOCK	J	87-B10-269-010		UT2+3-12 W/O CR
31	8Z-CDB-169-010		PANEL,CD SANYO	K	87-352-075-210		VT2+2.6-10
32	8A-CD9-202-010		GUIDE,LED	L	87-WA5-253-010		W,3.3-10-0.8
33	8A-CD9-023-010		POINTER,TU	M	87-661-095-410		VFT1+3-8
34	8A-CD9-207-010		GEAR,TU B	N	87-251-073-410		SCREW,U+2.6-6
35	8A-CD9-206-010		GEAR,TU A				
36	8A-CD9-208-010		DRUM,TU				
37	8A-CD9-209-010		LEVER,BAND A				
38	8A-CD9-205-010		GUIDE,GEAR				
39	8A-CH4-209-010		HLDR,PT				
△ 40	8A-CD9-608-010		PT,H 2.5W				

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange	GM	Metallic Green
YM	Metallic Yellow	DM	Metallic Orange	PT	Transparent Pink

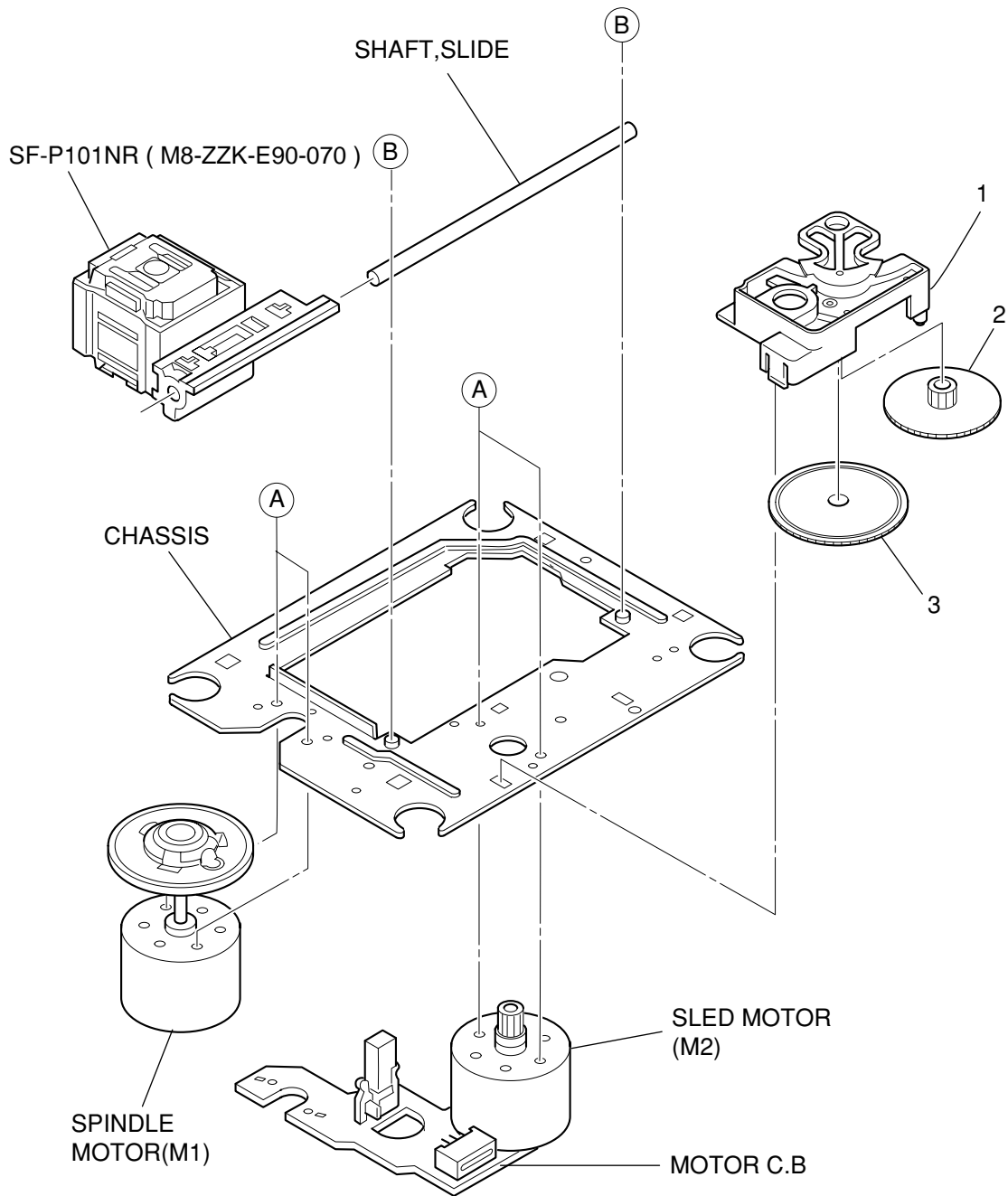
TAPE MECHANISM EXPLODED VIEW 1 / 1



TAPE MECHANISM PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	S1-921-030-4A0		HEAD BASE	36	S1-921-140-030		REC BUTTON LEVER
2	S1-821-030-070		AZIMUTH SPRING	37	S1-921-140-170		P.S.LEVER SPRING
3	S1-921-030-090		PANEL P SPRING	38	S1-921-073-040		RF CLUTCH ASSY
4	S1-921-260-050		GEAR PLATE SPRING	39	S1-921-070-030		RF BELT
5	S1-921-265-020		GEAR PLATE ASSY	40	S1-921-260-020		CAM GEAR
6	S1-510-020-020		REC SPRING PLATE	41	S1-921-140-160		E ACTUATOR SPRING
7	S1-921-015-010		CHASSIS ASSY	42	S1-921-093-210		FLYWHEEL ASSY
8	S1-921-030-110		HEAD PANEL	43	S1-921-090-380		MAIN BELT
9	S1-921-143-160		BASE ASSY	44	S1-921-120-590		MOTOR PULLEY
10	S1-921-141-8A0		M CONTROL SPRING	45	S6-002-030-220		MOTOR EG530AD-2B
11	S1-921-260-4A0		SENSING LEVER	46	S6-209-100-100		E HEAD PH-K380-MS1
12	S1-921-043-100		PINCH ROLLER ARM ASSY	47	S1-921-030-050		MG ARM
13	S1-921-130-010		EJECT SLIDE LEVER	48	S1-921-140-210		REC BUTTON LEVER SPRING
14	S1-921-141-3A0		P CONTROL SPRING	49	S1-821-100-690		RECORD SAFETY LEVER
15	S1-921-140-550		PAUSE LEVER(E)	50	S1-821-128-9A0		MOTOR BRACKET
16	S1-921-140-120		PAUSE LEVER SPRING	51	S1-821-010-500		PLAY BUTTON LEVER SPRING
17	S1-921-140-110		PAUSE STOPPER	52	S6-201-011-110		HEAD,RP7442ES-0951
18	S1-921-140-150		BUTTON LEVER SPRING(B)	A	S9-P04-200-310		C TAPPING SCREW 2-3
19	S1-821-011-590		E KICK LEVER	B	S1-921-120-020		MOTOR COLLER SCREW
20	S1-921-141-070		BUTTON LEVER SPRING(A)	C	S9-B10-200-510		P TAPPING BIND SCREW M2-5
21	S6-401-011-490		LEAF SW MSW-1541T	D	S9-C07-204-510		SCREW,TAPPING(CAMERA)M2-4.5
22	S1-921-140-090		SWITCH ACTUATOR	E	S9-P01-200-610		SCREW,M2-6
23	S1-921-140-080		PUSH BUTTON ACTUATOR	F	S9-B01-200-310		(+)BIND SCREW M2-3
24	S1-921-140-190		PLAY BUTTON LEVER	G	S9-F08-200-710		AZIMUTH SCREW M2-7
25	S1-921-030-100		MG ARM SPRING	H	S1-921-120-030		MB SCREW
26	S1-921-140-040		REW BUTTON LEVER	I	S9-W02-300-100		P WASHER CUT 1.2-3.8-0.3
27	S1-921-140-050		FF,BUTTON REVER	J	S9-W02-500-100		P WASHER CUT 1.45-3.8-0.5
28	S1-921-140-060		STOP BUTTON LEVER	K	S9-W01-400-100		P WASHER 2-3.5-0.4
29	S1-921-140-600		PAUSE BUTTON LEVER	L	S9-W01-130-200		P WASHER 2.1-4-0.13
30	S1-821-100-700		FF GEAR				
31	S1-921-050-060		SENER				
32	S1-921-053-100		TAKE UP REEL ASSY				
33	S1-829-100-010		PACK SPRING				
34	S1-921-050-150		S REEL HUB				
35	S1-921-050-220		BACK TENSION SPRING				

CD MECHANISM EXPLODED VIEW 1 / 1



CD MECHANISM PARTS LIST 1 / 1

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	S2-121-A28-400		COVER GEAR
2	S2-511-A21-000		GEAR MIDDLE
3	S2-511-A21-100		GEAR, DRIVE
A	S1-PN2-03R-OSE		SCR PAN PCS 2-3
B	87-261-073-410		SCR S-TPG FLT 2.6-6
ALL	M8-ZZK-E90-070		DA11T3C

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